INDEX

Page

ABYSSINIA, Current money of..... 204
ACOSTA, Reference to writings of..... 211
— cited on weather-making among Peruvians..... 39
— — — rain-making among the Santa Cruz Indians..... 42
ACROSS the deserts to San Francisco mountain, Arizona, Record of lecture on..... xix
ADLER, CYRUS, Record of lecture by..... xix
ÆOLUS, Invocation to..... 46
AFFORESTATION, Processes of..... 143
AFRICA, central, dwarfs and forests of, Record of lecture on..... xvii
—, Civilization of..... 16
—, Former occupants of..... 16
—, Inhabitants of..... 16
—, Slow progress of..... 17
AFRICAN slave trade found profitable..... 16
AGES of human development..... 3
AGRICULTURE, Egyptian..... 7
AIR, Geography of the..... 200
AITKEN, Reference to experiments of..... 59
ALASKA Boundary Commission, Record of discussion on work of..... xiii
ALASKAN Boundary Surveys, Record of discussion on..... xiv, xix
ALBATROSS and the wind..... 45
ALEXANDER, Conquests of..... 7
ALGERIA, Climate of..... 17
—, Conquest of, by French..... 17
—, Mortality in..... 17
—, Population of..... 17
AMAZON, Rich valley of..... 18
AMENDMENTS to by-laws, Record of tabling of..... xv
AMERICA, Physical geography of..... 17
—, Discovery of..... 16
— — —, New light on the..... 224
AMERICAN Forestry Association, Record of joint meeting with..... xviii
ANDERSON, W. W., cited on negro folk-lore..... 44
ANDES of South America, explorations in, Record of lecture on..... xv
ANGEL, ——, Reference to writings of..... 211
ANIMALS, Geographic distribution of..... 229
ANTARCTIC continent, Note on the..... 217
ANTIQUITIES and aborigines of Peru, Record of lecture on..... xx
APPALACHIANS, Across the, Record of lecture on..... xix
—, northern, Record of address on..... xviii
—, southern, Geomorphology of..... 63
ARABIA, Physical features of..... 5
ARABS, Indebtedness of the world to the.. 6
—, Nomadic character of..... 6
ARBUTHNOT, G., Record of lecture by..... xviii
ARCHITECTURE, Egyptian..... 7
ARGENTINA, Climate of..... 17
—, Immigration into..... 17
—, Population of..... 17
ARIZONA, Rainfall season in..... 57
—, northern, and the Rio Grande, Record of lecture on..... xix
ARKANSAS river and the plains, Record of lecture on..... xix

Page

ARAMDA, Destruction of..... 16
ARYAN conquest of India and Persia..... 10
— migration..... 9
ASHBURTON treaty..... 250
ASIA, political geography of, Record of lecture on..... xviii
ASSYRIA, Cuneiform characters used in... 8
—, Extent of..... 7
—, Indebtedness of the world to..... 8
— and Babylonia, recent discoveries in, Record of lecture on..... xviii
ASTORIA, Founding of..... 249
AUBREY, cited on local superstition..... 46
AUDITING Committee, Report of the: Wm. A. De Caindry and A. C. Rizer. xxviii
AWOSTING LAKE, Geographic features of. 30

BABYLON, City walls of..... 8
—, Civilization of..... 4
—, Palaces, etc., of..... 8
BABYLONIA, Extent of..... 7
BAKER, MARCUS, Record of address by.... xv
—; Surveys and maps of the District of Columbia..... 149
BALBOA, Voyage of..... 241
BALLENY, Reference to discoveries of..... 218
BARROWS, ——, cited on discovery of the Columbia..... 246
BARUS, CARL, Reference to experiments of 59
BATTLE (The) of the Forest; B. E. Fernow..... 127
BATTLES of Fredericksburg, Record of addresses on..... xx
BAUDOUIN, ——, Experiments of, in Algeria..... 48
BECHER, CAPTAIN, cited on identity of Watling island..... 182–184
BEDOUIN Poetry and Romance..... 6
BELLINGSHAUSEN, Reference to voyage of..... 217
BENTON, T. H., cited on joint occupation of Oregon..... 252
— — — Rocky mountains as natural boundary..... 255
BERGEN, Miss F. D., cited on call of robin. 43
BERING, Reference to discoveries of..... 207
BERING SEA Arbitration, practical results of, Record of address on..... xviii
BERTHOUD, EDWARD L.; Sir Francis Drake's anchorage..... 208
BIBLIOGRAPHY of artificial production of rainfall..... 60–62
BIENAIMÉ, CAPTAIN, Reference to voyage of..... 223
BIRTHPLACE of commerce and letters..... 9
BISCOE, Reference to discoveries of..... 218
BLACKFEET, Rain-making among the..... 38
BOMBAY to the Himalayas, Record of lecture on..... xvi
BOUNDARY, international, between Mexico and United States, Record of discussion on..... xix
— survey, Alaskan, Record of discussion on..... xix
BOURKE, J. G., cited on rain-making among the Moqui..... 39
BOUSSINGAULT, ——, Reference to work of. 231

Page

BRAVAIS, LIEUT., Reference to work of.. 223
BRONZE age..... 3
BROWN, FRANCIS, Record of lecture by.. xviii
BROWN, J. HENRY, cited on history of Oregon..... 252
BRUCE, DR, Reference to report of..... 222
BRYANT, W. C., Reference to writings of.. 210
—, Quotation from..... 267
BUCKLE, H. T., Quotation from. 18
BY-LAWS of the National Geographic Society.....xxix

CABRILLO'S explorations..... 213
CALIFORNIA COAST, Old map of..... 211
— represented as an island..... 213
CALL of birds for rain 43
CAMBRIDGE, Tardy recognition of geography at..... 201
CAMBYSES, Conquests of..... 7
CAMPBELL, M. R., Record of address by... xv
—, and C. WILLARD HAYES; Geomorphology of the southern Appalachians 63
CANADIAN Northwest Fur Company..... 251
CAPE COLONY, Climate of.. 17
— —, Population of 17
CASTELAR, Reference to article by.. .. 180
CATLIN, GEORGE, cited on rain-making among the Mandans..... 37
CATS and the weather..... 45
CAVENDISH, T., Voyages of... 208
CARVER, JONATHAN, Reference to writings of. 267
CENTRAL AMERICA, Settlement of..... 19
CHALLENGER expedition, Reference to.218–222
CHANCELLOR, Reference to voyage of..... 207
CHARLEVOIX, P. F. X., cited as to weather-making among the Natchez..... 36
CHINA, Civilization of..... 4
—, Crystallized culture of.. 5
—, Physical geography of..... 4
CHINESE inventions..... 5
CHOCTAWS, Rain-making among the..... 38
CICADA, periodic appearance of, Record of address on..... xvii
CIVILIZATION, Arrested development of.. 13
—, Decay of..... 14
—, European, Birthplace of..... 16
—, Geographic progress of..... 1
CLARK, W. P., cited on rain-making among the Blackfeet..... 38
CLIFF-DWELLERS of Mexico, Record of address on..... xv
COLERIDGE, S. T., Quotation from..... 45
COLUMBUS, Falsification of log by..... 180
—, First landfall of..... 179
COMBS, MISS CORA, Honorable mention of..... 228
COMMERCE, Birthplace of..... 9
COMPASS, Undetermined variation of..... 181
CONCUSSION theory of rain-making..... 53–56
CONFISCATION of Boschke's map..... 157
CONSTANTINOPLE, Fall of..... 15
COOK, CAPTAIN JAMES, Reference to discoveries of.....207, 217, 241–243
COPPER MINES, Ancient. 3
COSTA RICA AND PANAMA, Record of lecture on..... xx
COUES, ELLIOTT, Record of address by....xviii
—, Reference to writings of..... 247
CRATER LAKE, Mount Shasta and Sacramento, Record of lecture on... xix
CROFFUT, W. A., Record of discussion by.. xvi
CRONAU, R., Reference to writings of 183
CROW, Call of, for rain..... 43
CUBA, geography of, Record of address on..xvii
CURTIS, G. E., Reference to report of..... 55
CUSHING, F. H., Record of lecture by..... xvi, xix, xx

Page

DABLIN, ——, cited on weather-making among the Illinois..... 41
DAKOTA INDIANS, Weather-making among the..... 40
DALLMAN, ——, Reference to discoveries of..... 218
DALY, C. P., Record of letter from..... xvii
DARTON, N. H., Record of address by xx
—; Shawangunk mountain..... 23
DAVIDSON, G., Reference to researches of. 213
DAVIS, A. P., Record of discussion by..... xvi
—, Record of lecture by..... xix
DAVIS, WM. M., Record of lecture by..... xviii
—, Reference to writings of..... 65, 66, 71, 73, 79, 226
DAY, D. T., conductor of excursion..... xvi
—, Record of lecture by..... xix
DE KERGUELEN, ——, Reference to voyage of..... 217
DICKINS, E. F., Record of discussion by.. xiv
DILLER, J. S, Record of lecture by..... xix
—, Reference to writings of..... 226
DISCOVERY of America, New light on the. 224
DISTRIBUTION (Geographic) of animals and plants..... 229
DISTRICT OF COLUMBIA, Alleged center of..... 162
—, Boundary monuments of..... 152
—, Corner-stone of..... 149
—, Errors in survey of..... 155
—, First survey of..... 151
—, Geological Survey map of..... 158
—, Original dimensions of..... 153
—, Original limits of.. 150
—, Retrocession of portion of.....153, 157
—, Surveys and maps of..... 149
—, True center of 163, 164
DOBRIZHOFFER, —— Reference to writings of..... 49
DORSEY, J. OWEN, cited on weather-making among the Omahas..... 36, 41
—, cited on weather-making among the Kanze (Omaha)..... 40
DRAGON TREES, Longevity of..... 128
DRAKE, SIR FRANCIS, Anchorage of..... 208
—, Bravery of..... 208
—, Connection of, with slavery 16
—, Explorations of..... 241
—, Raids on Spanish colonies by..... 208
DU CHAILLU, PAUL B., Record of lecture by.....xvii, xviii
DUCK, Call of, for rain..... 43
D'URVILLE, Reference to voyage of ...218, 222
DWARFS, African, habits of..... 3
— and Forests of Central Africa, Record of lecture on.....xvii
DYER, S. A., Reference to report of..... 55
DYRENFORTH, R. G., Rain-making experiments by.....54–56

EARTH'S SURFACE, shaping of the, Record of lectures on..... xiii
ECONOMIC aspects of erosion, Record of lecture on..... xviii
EGYPT, Agriculture of..... 7
—, Architecture of 7
—, Civilization of. 4
—, Geographic features of 6
EGYPTIANS, Indebtedness of the world to the..... 7
ELLICOTT, A., Reference to work of... 150, 160
ELLIS, JOHN T., Reference to report of.... 55
ENGEL, ——, Reference to writings of..... 213
ENGLAND, Colonies founded by 16
—, Foreign possessions of..... 16
—, its beginning as a maritime power..... 16
—, Mineral wealth of..... 16
—, Shakespeare's, Record of lecture on.. xviii

Page

ENGLISH NAVY, Supremacy of..... 208
— reforms in India..... 11
EROSION, uplift and, Record of lecture on..... xiii
ESPY, JAMES P., Reference to writings of..... 49, 52
EXCURSION to Dismal swamp, Record of.. xvi
EXELMANS, LIEUTENANT, Reference to work of..... 223

FAIRCHILD, EUGENE, Reference to report of..... 55
FARRELO, Voyage of..... 241
FARWELL, SENATOR, Interest of, in rain-making experiments..... 54
FERNOW, B. E.; The battle of the forest... 127
FIELD MEETING, Record of..... xx
FIRST landfall (The) of Columbus; Jacques W. Redway..... 179
FISKE, JOHN, Reference to writings of..... 183
FLEMER, J. A., Record of discussion by... xiv
FLETCHER, ROBERT, explanation of local superstition..... 46
—, cited on call of quail..... 43
FLETCHER, ——, cited on Drake's voyages..... 208–212
FLORA, early, Types of..... 129–131
— of the Pacific coast..... 140, 141
FLORIDA treaty..... 244
FOLK-LORE remnants..... 43
FOREST, Battle of the..... 127
— management, German method of..... 147
—, North American, Subdivisions of..... 139
— trees, eastern, Dimensions of..... 136
—, Petrified, in Yellowstone National Park..... 130
FORESTRY, Intelligent..... 146
FORNEY, S., Record of address by..... xix
FOSTER, JOHN W., Record of lecture by.. xviii
FOX, C. J., cited on Nootka treaty..... 243
FOX, CAPTAIN G. V., Reference to writings of..... 182
—, cited on first landfall of Columbus ... 179
FREDERICKSBURG and vicinity, Record of symposium on..... xx
—, Record of field meeting at..... xx
FREMONT, the Path-finder..... 264
FROM Cape Town into the countries of the Ma-Shukulumbe, Record of lecture on..... xviii
FROST, JOHN, cited on rain-making among the Mandans..... 37
FROSTS, killing, Effects of, on distribution..... 233

GALIANO, Voyage of..... 241
GALILEO, Reference to discoveries of..... 46
GANNETT, HENRY, Record of lecture by... xix
— — — paper by..... xv
GATHMAN, L., Method of, for obtaining rain..... 52
—, Rain-making experiments of..... 53
GEOGRAPHERS, Meeting of..... 226
GEOGRAPHIC distribution of animals and plants..... 229
— — — life, Record of address on..... xviii
— — — soils, Record of address on..... xviii
— progress of civilization; Gardiner G. Hubbard..... 1
— societies, work of foreign, Record of address on..... xvii
GEOGRAPHY, commercial, Field of..... 203
—, Distinct branches of..... 204
— Educational neglect of, in the United States..... 206
—, Importance of..... 201
—, mathematical, Relation of..... 204
— of Cuba, Record of address on..... xvii

Page

GEOGRAPHY of the air; A. W. Greely..... 200
—, etc, of Oregon..... 239
—, physical, Broad field of..... 204
—, political, Scope of..... 204
—, Proper restriction of..... 201
—, science of, Record of address on..... xviii
GEOLOGY of Ulster county, New York..... 24
GEOMORPHOLOGY of the southern Appalachians; C. Willard Hayes and Marius R. Campbell..... 63
GEORGETOWN, Early existence of..... 153
GERMAN method of forest management... 147
GERMANY, Study of geography in..... 200
GIBBON, GENERAL JOHN, Record of address by..... xx
GILBERT, G. K., conductor of excursion .. xvi
—, Record of lectures by..... xiii, xix
— — — thanks to..... xiv
—, Reference to writings of..... 226
GOLD medal of National Geographic Society..... 227
GOLDEN GATE, Yosemite, Los Angeles and San Bernardino, Record of lecture on..... xix
GOODE, R. U., Record of discussion by..... xvi
GOOSE dancing for rain..... 43
GOVERNMENT, Patriarchal..... 5
GRAY, ASA, cited on growth of trees..... 127
GRAY, CAPTAIN, Explorations by..... 245
GREAT BRITAIN, Geographic features of.. 15
—, Study of geography in..... 201
GREECE, Geographic features of..... 11
—, Indebtedness of the world to..... 12
GREEKS, Different characteristics of..... 12
GREELY, A. W., Geography of the air..... 200
—, Record of address by..... xvii, xviii
—, to judge essays..... 228
GREENHOW, R., cited on possession of Oregon..... 254
—, Reference to writings of..... 210
GRINNELL, G. B., cited on weather-making among the Pawnee..... 40
GULF STATES, Increase of negroes in..... 20
GUYOT, P., Reference to work of..... 206

HAITI, Degradation of inhabitants of..... 21
—, Revolution in..... 21
HALE, Reference to writings of..... 211
HARRINGTON, MARK W., Record of lecture by..... xix
—, Record of paper by..... xvi
—, Weather-making, ancient and modern..... 35
HARVEY, FRED L., Acknowledgment to... 160
HAWKINS, Connection of, with slavery.... 16
HAYDEN, EVERETT, Record of address by..... xviii
HAYES, C. WILLARD, Record of address by..... xv
— and MARIUS R. CAMPBELL; Geomorphology of the southern Appalachians..... 63
HECETA, Voyages of..... 241
HECKEWELDER, J. G. E., cited as to weather-making among Muskingum Indians..... 36
HEER, Reference to work of..... 207
HEIGHT of Mount Saint Elias; Israel C. Russell..... 215
HERODOTUS, Quotation from..... 7
HERRERA, Reference to writings of....186, 187
HILL, R. A., Record of address by..... xvii
—, Record of lecture by..... xvi, xx
HISTORY, etc, of Oregon..... 239
HODGKINS, W. C., Record of discussion by..... xiii
HOLUB, EMIL, Record of lecture by .xviii, xix
HOMER, Reference to poems of..... 12

Page

HOOKER, Reference to work of..... 207
HORACE, Quotation from, on fame..... 261
HOTCHKISS, JED, Record of address by... xix, xx
HOUSTON, EDWIN J., Reference to writings of..... 52
HUBBARD, GARDINER G., Geographic progress of civilization..... 1
—, Record of address by..... xiv, xx
HUDSON Bay company..... 250
HUDSON, Reference to discoveries of..... 207
HUMBOLDT, cited on climatic factors..... 229
—, cited on early navigation of North Pacific..... 241
HUMIDITY, Effect of, on distribution..... 238
HURONS, Rain-making among the..... 41
HYKSOS, Conquests of..... 7

ICELAND, Magnetic observations in, in 1892..... 223
ICE-WORK, Record of lecture on..... xiii
ILLINOIS, Weather-making among the.... 41
INCANTATIONS in weather-making..... 36
INDIA, Diversity of population of..... 11
—, English reforms in..... 11
—, Original arts of..... 11
—, Physical geography of..... 10
—, Population of..... 10
—, Various civilizations of..... 11
INDIANS, Degrees of civilization among... 18
—, equatorial, Habits of..... 3
—, Mandan, Habits of..... 3
—, Organized government of..... 18
—, Reliance of, for support..... 18
—, Variety of race and language among.. 18
INDUSTRIAL statistics, Record of paper on..... xv
INTERACTION, Record of lecture on..... xiii
INVENTIONS of the Chinese..... 5
IRANIAN PLATEAU, Population of..... 10
IROQUOIS, Weather-making among the... 37
IRRIGATION of Babylonia..... 7
— in the far west..... 19
IRVING, WASHINGTON, cited on founding of Astoria..... 249
— — — first landfall of Columbus..... 179
ITALY, Geographic position of..... 12
—, New civilization in..... 14
—, Study of geography in..... 201

JAMAICA, Geographic features of..... 20
—, Population of..... 21
—, Slavery in..... 21
JAN MAYEN, Magnetic observations in, in 1892..... 223
JAPAN, Abolition of feudal despotism in.. 193
—; D. W. Stevens..... 193
—, Educational institutions in..... 195
—, Executive government of..... 198
—, Imperial Diet of..... 198
—, Laws of..... 199
—, Newspaper press of..... 196
—, Public administration of..... 195
—, Religious liberty in..... 194
—, Restoration of imperial government in..... 193
—, Transportation facilities in..... 195
JESSUP, A. A., Record of lecture by..... xx
JOHNSON, L. C., Reference to writings of.. 110
JOHNSON, W. D., Record of lecture by..... xv
JULIEN, —, cited as to direction of glacial scorings..... 33

KAMCHATKA, Habits of natives of..... 3
KEANE, JOHN J., Record of remarks by.. xvii
KEELER, LUCY E., cited on weather-making among the Dakotas..... 40
KENNAN, GEORGE, Record of lecture by... xx

Page

KENTUCKY and Virginia, great caves of, Record of lecture on..... xix
KEPLER, Reference to discoveries of..... 46
KERR, W. C., Reference to writings of..... 76
KILDEE, Call of, for wind..... 44
KILLING frosts, Important effects of..... 233
KING, NICHOLAS, Letter from..... 164
—, Reference to letter from..... 160
— — — work of..... 160–163
KURINO, S., Record of remarks by..... xviii

LABOR and industries of the South, Record of lecture on..... xviii
LAKE AWOSTING, Geographic features of.. 30
LAKE MINNEWASKA, Geographic features of..... 29
LAKE MOHUNK, Geographic features of... 27
LAKE SUPERIOR, Some physical features of, Record of lecture on..... xix
LANDING PLACE, Second, of Columbus..... 191
LAND of the Midnight Sun, Record of lecture on..... xviii
LANDTAG of Prussia, Reference to debate in..... 147
LA ROCHE, —, Reference to voyage of... 217
LARSEN, C. A., Reference to voyage of.. 220–222
LATITUDE, Disagreement as to..... 209
—, Parallels of, and peculiarities of nations..... 20
LAWS of temperature control of the geographic distribution of terrestrial animals and plants; C. Hart Merriam.... 229
LEHMAN, R., Reference to suggestions by. 226
L'ENFANT, P. C., Reference to work of... 150, 154, 159, 161
Letters, Birthplace of..... 9
LEWIS AND CLARKE, Explorations of..... 246
LINSSER, —, Reference to work of..... 231
LITERATURE on artificial production of rainfall..... 60–62
LITTLEHALES, G. W., Record of address by..... xviii
LOG BOOK, Falsification of, by Columbus. 180
LOOMIS, L. C., Record of address by..... xviii
LOON, Call of, for rain..... 43
LOUISIANA purchase..... 244
LUMHOLTZ, CARL, Record of address by.. xv

MCDUFFIE, SENATOR, cited on supposed worthlessness of Oregon..... 254
MACFARLANE, A., cited on Dyrenforth's experiments..... 56
MCGEE, W J, Record of lecture by..... xix
—, Reference to writings of.. 65, 79, 81, 82, 89, 94
MCGRATH, J. E., Record of address by.... xix
—, Record of discussion by..... xiii
—, Reference to work of..... 215
MCGREE, —, cited on formation of Mississippi bad lands..... 143
MACKAY, GEORGE, Story of..... 49
MAGNETIC observations in Iceland, Jan Mayen and Spitzbergen in 1892, Note on..... 223
MAJOR, R. H., Reference to researches of..... 182
MALDONADO, Voyage of..... 241
MAN, the master of his environment..... 22
MANDAN, Rain-making among the..... 37
MANDAÑA, ELVARO, Reference to voyage of..... 217
MAP, Boschke's, Confiscation of..... 157
MAPS, etc, of the District of Columbia 149
MARIE-DAVY, Reference to writings of.... 231
MARKHAM, C. R., cited on first landfall of Columbus..... 184, 185
MARTEL, CHARLES, at Tours..... 6
MAURY, M. F., Reference to work of..... 206
MEARNS, E. A., Record of address by..... xix

XUM

Page

MEARS, CAPTAIN, Reference to discoveries of. 242, 243, 245, 246
MECCA, Annual pilgrimages to..... 5
MEDINA, Annual pilgrimages to..... 5
MELBOURNE, FRANK, Alleged rain-making by..... 58
MEMBERS, Active, List of..... xxxiv
—, Corresponding, List of..... lxxii
—, Honorary, List of..... xxxiii
MENDENHALL, T. C., Acknowledgment to. 42
—, Record of discussion by..... xiii
—, Record of paper by xvii
—, to judge essays..... 228
MERIDIAN, The initial..... 159
MERRIAM, C. HART; Laws of temperature control of the geographic distribution of terrestrial animals and plants..... 229
—, Record of address by..... xviii
—, Record of papers by..... xiv
MESOPOTAMIA, Geographic features of..... 7
—, Great cities of..... 8
—, Successive rulers of..... 8
MEXICO, Cliff-dwellers of, Record of address on..... xv
—, mountains of, Record of lecture on..... xvi
MINNEWASKI LAKE, Geographic features of 29
MISSISSIPPI bad lands, Formation of..... 143
—, Sources of, Record of address on..... xviii
— valley a factor in growth and prosperity of United States..... 19
— —, Immigration into..... 19
MITCHELL, JOHN H.; Oregon: its history, geography, and resources..... 239
—, Record of lecture by xix
MIXED RACES, Adaptation of South America to..... 19
MOHAMMEDANS and the sciences..... 6
— as law-givers..... 6
MOHUNK LAKE, Geographic features of .. 27
MONOGRAPHS of the National Geographic Society,..... 225
MOONEY, JAMES, cited on Indian belief concerning snakes and rain..... 44
— cited on supposed influence of killdeer.. 44
MOQUI, Rain-making among the..... 38, 39
MORTON, J. STERLING, Record of remarks by xviii
MOSMAN, A. T., Record of address by..... xix
MOUNT RAINIER, Ascent of, Record of lecture on..... xiii
MOUNT SAINT ELIAS, Great depth of snow on..... 215
—, Height of..... 215
MOUNTAINS of Mexico, Record of lecture on xvi
MOXOM, P. S., Record of letter from..... xvii
MUÑOZ cited on first landfall of Columbus 179
MURDOCH, LIEUTENANT, Reference to researches of 182
MURRAY, J., Reference to work of..219, 221, 222

NATAL, Climate of..... 17
—, Government of 17
—, Immigration into..... 17
—, Population of 17
NATCHEZ, Weather-making among the... 36
NATIONAL domain, Record of discussion on xvi
NATIONAL GEOGRAPHIC SOCIETY, Monographs of 225
NAVARRETE, M. J. DE, cited on first landfall of Columbus..... 179
NEGRO folk-lore on Santee river..... 44
—, Free, in equatorial regions supplants white man..... 22

Page

NEGRO population of United States 20
NEUMAYER, DR., Reference to writings of..... 222
NEWCOMB, SIMON, Reference to writings of..... 52, 53
NEWELL, F. H., Record of discussion by.. xvi
—, Record of lecture by..... xix
NEW light on the discovery of America... 224
NEW MEXICO, Rainfall season in..... 57
NEWTON, Reference to discoveries of..... 46
NIAGARA FALLS, Side trip to, Record of lecture on..... xix
NIBLACK, A. P., Record of discussion by.. xiv
NICARAGUA CANAL, Record of lecture on.. xviii
NILE, Length and breadth of the..... 7
— valley, People of the..... 7
NINEVEH, City walls of..... 8
—, Palaces of..... 8
NOBLE, W, cited on rain-making among the Choctaws..... 38
NOOTKA convention..... 242
NORTH AMERICA, Settlement of..... 19
NORTHEASTERN boundary of United States, Record of paper on..... xvii
NORTHERN ROCKIES, down the Columbia, Mount Rainier and Portland, Record of lecture on..... xix
NORWAY, Physical features of..... 14

OBSERVATIONS, Magnetic, in Iceland, Jan Mayen, and Spitzbergen in 1892..... 223
OCEANOGRAPHY, recent results in, Record of address on xviii
OFFICERS of the National Geographic Society..... xxxii
OGDEN, H. G., Record of discussion by..... xiii
OIL and gas regions, trip through, Record of lecture on..... xix
OLDHAM, Y., Reference to paper by..... 224
OMAHA, Weather-making among the 36
OREGON admitted as a state..... 266
—, Claim of Great Britain to..... 241
—, Claim of Spain to..... 241
—, Discovery of..... 240
—, First governor of..... 266
—, Historical sketch of..... 240
—: its geography, history and resources, Record of lecture on.....xix, 239
—, Origin of name of..... 266
— territory, Original dimensions of..... 240
ORIGIN and configuration of the upper Alpine passes, Record of lecture on.. xviii
ORINOCO, Rich valley of 18
ORTON, EDWARD, Record of lecture by... xix
OTTOMAN EMPIRE, Record of lecture on.. xix
OUTFIT and cruises of the Albatross, Record of address on xviii
OUTHWAITE, J. H., Record of remarks by..... xvii
OXFORD, Tardy recognition of geography at..... 201

PACIFIC and Arctic whaling industry, Record of lecture on xiv
PARKER, WM. H., Reference to researches of..... 182
PARKMAN, FRANCIS, cited on rain-making among the Hurons..... 41
PERES, JUAN, Voyage of..... 241
PERIODIC appearance of cicada, Record of address on..... xvii
PERKINS, G. C., Record of lecture by..... xiv
PERKINS, E. T., JR., Record of discussion by xvi
—, Record of lecture by..... xix
PERSIA, Physical geography of..... 10
PERSIANS, Character of the..... 10

Page

PERU, Antiquities and aborigines of, Record of lecture on..... xx
—, Record of lecture on xvii
PERUVIANS, Rain-making among the..... 39
PHENICIA, Indebtedness of the world to.. 9
—, Wealthy cities of..... 9
PHENICIANS, Colonies of..... 9
—, Manufactures of..... 9
—, Mercantile career of.. 9
PHYSICAL methods of weather-making... 46
PHYSIOGRAPHIC processes, Record of address on xviii
PHYSIOGRAPHY, elements of, Record of address on..... xviii
— of southern Appalachians, Record of address on..... xv
PICKERING, W. H., Record of lecture by... xv
PIPE-SMOKING in weather-making..... 36
PLANTS, Geographic distribution of 229
PLUTARCH cited on rainfalls after battles. 53
POLITICAL geography of Asia, Record of lecture on xviii
POPE ALEXANDER'S bull..... 212
PORTUGAL, Physical features of..... 15
PORTUGUESE traders and discoverers..... 15
POWELL, J. W., Record of address by..xiv, xviii
—, Record of lecture by xix
—, Reference to writings of..... 226
POWELL, W. B., to judge essays..... 228
POWERS, EDW'D, Reference to writings of 53
PRACTICAL results of Bering Sea arbitration, Record of address on..... xviii
PRATT, J. F., Record of address by.. xix
—, Discussion by..... xiv
PRAYER in weather-making 36
PRESIDENT'S annual address: Russia, Record of delivery of..... xx
PRETTY, ——, Reference to writings of. 208–210
PRINTING PRESS, Invention of..... 15
PRIOR, ——, Reference to writings of..... 210
PRIZE ESSAYS: National Geographic Society..... 227
PROBLEM of the Yosemite, Record of lecture on xv
PROCTOR, JOHN R., Record of address by xviii
PROGRESS of civilization..... 1
PUBLICATIONS of the Society... vi
PUBLIC domain in its social aspect, Record of discussion on.. xvi
— lands of Idaho, Record of discussion on. xvi
— — — the United States, Record of discussion on..... xvi
PUEBLO INDIANS, home of, Record of lecture on..... xix
——, Record of lecture on..... xvi

Quail, Call of, for rain..... 43

RACES, Struggle of the..... 22
RAIN produced by prairie fires..... 49
RAIN-MAKING, Bibliography of..... 60–62
— and stopping by superstitious and religious methods.. 35
— by artificial means 48
— — atmospheric concussion..... 52–56, 59
— — chilling atmosphere..... 52, 59
— — means of great fires..... 49–51, 59
— — use of kite, in Algeria..... .. 46
— experiments, Congressional appropriation for 54
—, Literature of..... 60–62
—, Secret method of..... 58
RAINIER, MOUNT, ascent of, Record of lecture on..... xiii
RAVEN, Call of, for rain 43
RECEPTION at Arlington hotel, Record of. xix
RECENT discoveries in Assyria and Babylonia, Record of lecture on..... xviii

Page

REDWAY, JACQUES W.; The first landfall of Columbus.. 179
REPORT of the Auditing Committee..... xxviii
— — — Recording Secretary..... xxi
— — — Treasurer..... xxvi
RESOURCES etc, of Oregon..... 239
RILEY, C. V., Record of address by..... xvii
RITTER, H. P., Record of address by..... xix
— — — discussion by..... xiii
ROBIN, Call of, for rain..... 43
ROCKY MOUNTAINS, Mineral wealth of.... 19
ROME, Conquest of 13
—, Indebtedness of the world to 13
—, Commerce of, with distant countries... 13
—, Genius of, for government 12
—, Renaissance of 15
ROMERO, M., Record of remarks by xvi
ROSS, J. C., Reference to voyages of... 217, 218
RUGGLES, DANIEL, Patent for rain-making granted to 54
RUSSELL, I. C., Reference to writings of... 226
— ; On height of mount Saint Elias 215
RUSSIA, Record of presidential address on. xx

SAINT ELIAS, MOUNT, Great depth of snow on..... 215
—, Height of..... 215
SAINT LAWRENCE RIVER, French settlements on 19
SAINT LAWRENCE VALLEY, Character of inhabitants of.. 19
SALT LAKE CITY and the Grand Canyon, Record of lecture on..... xix
SAMANA, Identity of 186
—, probable first landing place of Columbus 192
SAN ANTONIO, Rain-making experiments at..... 57
SAN DOMINGO, Degradation of inhabitants of..... 21
—, Disappearance of Indians from.. 21
—, First European settlement of 21
—, Former carrying trade of 21
—, Geographic features of 21
—, Revolution in..... 21
SAN FRANCISCO BAY. 210–214
SAN JUAN DE FUCA, Voyage of..... 241
SANTA CRUZ INDIANS, Rain-making among the 42
SAVAGE, Decadence of the..... 19
SCANDINAVIA, Revival of civilization in... 14
SCHOOLCRAFT, H. R., cited on rain-making among the Moqui..... 38
SCHROCK, WILLIAM, cited 43
SCYTHIAN incursions into Mesopotamia... 8
SEARS, ALFRED F., Record of lecture by xvii
SECRETARY, Recording, Annual report of the xxi
SEINE, Meuse, and Moselle, Record of lecture on..... xviii
SEQUOIAS, Longevity of. 128
SHAKESPEARE'S England, Record of lecture on.. xviii
SHALER, N. S., Record of address by..... xviii
—, Reference to writings of..... 81, 226
SHAPING of the earth's surface, Record of lectures on..... xiii
SHAWANGUNK MOUNTAIN; N. H. Darton.. 23
SIBERIA, Record of lecture on..... xx
SIGSBEE, C. D., Record of address by..... xviii
SIGSBEE deep-sea sounding machine, Record of address on xviii
SINCLAIR, C. H., Reference to work of..... 152
SIR FRANCIS DRAKE'S anchorage; Edward L. Berthoud..... 208
SLAVERY in the United States 20
SLAVE trade found profitable..... 16
SMITH, C. A., cited on call of loon 43

Page

SMITH, ERMINNIE A., cited as to weather-making among the Iroquois.. 36
SMITH, EUGENE A, Reference to writings of 110
SMITH, E. C., Record of lecture by..... xiii
SNAKES and the weather..... 44
SONORA, Mexico, Record of lecture on..... xix
SÓPATER, Superstition concerning..... 45
SOUTH AMERICA, Adaptation of, to mixed races..... 19
—, Disappearance of pure Indians from... 19
—, Inhabitants of..... 18
—, Luxuriant vegetation of..... 18
—, Settlement of 19
SOUTHERN APPALACHIANS, Geomorphology of..... 63
SPAIN, Commercial monopoly of..... 208
—, Physical features of 15
—, Slavery in 15
—, War of, with the Moors 15
SPITZBERGEN, Magnetic observations in, in 1892..... 223
STANLEY, H M., Reference to discoveries of..... 207
STANLEY-BROWN, J., Record of address by xviii
STATISTICS of our industries, Record of paper on..... xv
STEELE, ——, cited on people of Finland.. 46
STEVENS, D. W., Japan..... 193
STEVENSON, M. C., cited on rain-making among the Zuñi..... 39
STONE age..... 3
SUPERSTITIONS of Indians regarding weather..... 35–44
— of negroes regarding weather..... 44
— of sailors regarding weather 44, 45
SUPERSTITIOUS methods of rain-making and stopping 35
SURVEYS and maps of the District of Columbia ; Marcus Baker 149
SYRIA a civilizing agency..... 9
— a great battlefield..... 9
—, Physical features of..... 8

TANNER, Z. L., Record of address by..xviii, xx
TATARS of Asia, Habits of..... 3
TEMPERATURE control of geographic distribution of animals and plants..... 229
TERTIARY changes in drainage of southwestern Virginia, Record of paper on.. xv
TEXAS land system, Record of discussion on..... xvi
—, Rain-making experiments in..... 54–57
—, Western, Rainfall in..... 57
THOMPSON, A. H., Record of lecture by... xix
THOMPSON, GILBERT, Record of address by ..... xviii, xx
THOMPSON, J. B., Record of discussion by. xvi
TIERRA DEL FUEGO, Habits of natives of.. 3
TIMBER, species of, Economic value of..... 145
— — — found in markets..... 145
TITTMANN, O. H , Record of discussion by. xiv
TOBACCO-BURNING in weather-making.... 36
TOPOGRAPHIC forms, Record of address on xviii
TORNADOES, Proposed destruction of..... 47
TOURS, Battle of 6
TREASURER, Annual report of the..... xxvi
TREE LIFE, Persistence of..... 127
TURKISH EMPIRE, Record of lecture on... xx
TURNER, J. H., Reference to work of..... 215
TWISS, PROFESSOR, cited on discovery of the Columbia 246
TYPES of early flora..... 129

ULSTER COUNTY, N. Y , Geology of 24
UNITED STATES, northeastern boundary of, Record of paper on..... xvii

Page

UNITED STATES, Peculiarities of inhabitants of..... 20
— —, Slavery introduced into..... 20
UPLIFT and erosion, Record of lecture on. xiii
UTRECHT, Treaty of..... 263

VALDES, Voyage of..... 241
VANCOUVER, CAPTAIN, Reference to discoveries of 242, 243
VEDAS, Antiquity of the 10
VENEGAS, MIGUEL, Reference to writings of. 214
VIKINGS, Colonies founded by..... 14
—, Home of the..... 14
VIRGINIA BEACH, Record of meeting at... xvi
VISCAINO, Survey of 213

WALCOTT, C. D., Record of lecture by..... xix
—, Record of remarks by xvii
WELKER, FULLER, Acknowledgment to.. 35
WASHINGTON CITY, Rain-making experiments near..... 54
—, First map of..... 154
— in embryo, Reference to..... 153
— to Pittsburg and Niagara Falls, Record of lecture on..... xix
WATER supply of the United States, Record of lecture on xiv
WATER WORK, Record of lecture on..... xiii
WEATHER-CHANGING, Absurd schemes for..... 47
WEATHER-MAKING, Ancient and modern; Mark W. Harrington 35
— — — — —, Record of paper on..... xiv
WEBB, W. B., Reference to writings of..... 162
WEDDELL, J., Reference to voyages of..... 217
WELKER, P. A., Record of discussion by xiii
WELLING. J. C., Record of remarks by.. xvii
WEST, FAR, Irrigation in..... 19
WEST INDIES, Climate of..... 22
— —, Fertility of soil of..... 22
— —, Introduction of negroes into..... 16
WHALING industry, Record of lecture on.. xiv
WHITMAN Memorial College 260
WHITMAN, M , Mission of, to Washington. 257
—, Tardy appreciation of 260
—, the real path-finder..... 265
WHITNEY, MILTON, Record of address by xviii
WILKES, Reference to voyage of 218, 222
WILLIS, BAILEY, Record of address by... xviii
—, Reference to writings of 73, 79, 226
WILSON, H. M., Record of lecture by..... xvi
— — — remarks by..... xvi
WIND-RAISING, Methods of..... 39, 44, 45
WIND-WORK, Record of lecture on..... xiii
WINSHIP, N., Voyage of..... 250
WINSOR, JUSTIN, Reference to writings of. 210
WINTER (A) in the depths of the Grand Canyon, Record of lecture on. xix
WINTHROP, ——, cited as to retention of Oregon..... 255
WITCHES, Influence of, on weather..... 46
WOOD, J. W., Reference to writings of..... 65
WRIGHT, CARROLL D., Record of lecture by..... xviii

YELLOWSTONE NATIONAL PARK, Forest remains in 130
YELLOWSTONE, wonderland of the, Record of lecture on xix
YOSEMITE, problem of the, Record of lecture on xv

ZANZIBAR, Money recognized at 204
ZONES of civilization..... 1
— — faunal and floral distribution..... 229
— — production..... 1
ZULU-MA-ATABELE and modes of travel in South Africa, Record of lecture on.. xix
ZUÑI, Rain-making among the..... 39

THE

NATIONAL

GEOGRAPHIC MAGAZINE

VOLUME VI

JANUARY, 1894, TO MAY, 1895

W J McGEE, *Chairman* C. HART MERRIAM
Publication Committee

WASHINGTON
PUBLISHED BY THE NATIONAL GEOGRAPHIC SOCIETY
1895

XUM

OFFICERS OF THE NATIONAL GEOGRAPHIC SOCIETY

1894 AND TO MAY 31, 1895

GARDINER G. HUBBARD, *President*

T. C. MENDENHALL*
GEORGE W. MELVILLE
A. W. GREELY
C. HART MERRIAM
W. B. POWELL
HENRY GANNETT
Vice-Presidents

CHARLES J. BELL, *Treasurer*

CYRUS C. BABB,† *Recording Secretary*

ELIZA R. SCIDMORE, *Corresponding Secretary*

MARCUS BAKER
H. F. BLOUNT
G. K. GILBERT
EVERETT HAYDEN
JOHN HYDE
W J McGEE
F. H. NEWELL
EDWIN WILLITS
Managers

* Resigned December 14, 1894; vacancy filled by the election January 31, 1895, of Charles W. Dabney, Jr.

† Resigned January 31, 1895; vacancy filled by the election of Everett Hayden.

PRINTERS
JUDD & DETWEILER
WASHINGTON

XUM

CONTENTS

	Page
Geographic Progress of Civilization: Annual Address by the President, GARDINER G. HUBBARD	1
Shawangunk Mountain; by N. H. DARTON	23
Weather Making, Ancient and Modern; by MARK W. HARRINGTON	35
Geomorphology of the Southern Appalachians; by CHARLES WILLARD HAYES and MARIUS R. CAMPBELL	63
The Battle of the Forest; by B. E. FERNOW	127
Surveys and Maps of the District of Columbia; by MARCUS BAKER	149
The First Landfall of Columbus; by JACQUES W. REDWAY	179
Japan; by D. W. STEVENS	193
Geography of the Air: Annual Address by Vice-President A. W. GREELY	200
Sir Francis Drake's Anchorage; by EDWARD L. BERTHOUD	208
Note on the Height of Mount Saint Elias; by ISRAEL C. RUSSELL	215
Notes by C. C. BABB: The Antarctic Continent	217
Magnetic Observations in Iceland, Jan Mayen, and Spitzbergen in 1892	223
A New Light on the Discovery of America	224
Monographs of the National Geographic Society	225
Laws of Temperature Control of the Geographic Distribution of Terrestrial Animals and Plants: Annual Address by Vice-President C. HART MERRIAM	229
Oregon: its History, Geography, and Resources; by JOHN H. MITCHELL	239
Index to Volume VI	
Title-page and Imprimatur	i
Contents	iii
Illustrations	iv
Publications of the National Geographic Society	vi
Proceedings of the National Geographic Society	xiii
Seventh Annual Report of the Recording Secretary	xxi
Seventh Annual Report of the Treasurer	xxvi
Report of the Auditing Committee	xxviii
By-laws of the Society	xxix
Officers of the Society	xxxii
Honorary Members of the Society	xxxiii
Active Members of the Society	xxxiv
Corresponding Members of the Society	lxxii

ILLUSTRATIONS

		Page
Plate	1—Stereogram of the Shawangunk Mountain	23
	2—Lake Mohonk, looking southward	27
	3—Eastern Face of Shawangunk Mountain, looking southeastward	31
	4—Relief Map of the Chattanooga District	63
	5—Map of the Southern Appalachians, showing the deformed Cretaceous Peneplain	126
	6—Map of the Southern Appalachians, showing the deformed Tertiary Peneplain	126
	7—Drowning the Torrent	127
	8—Map showing the Natural Divisions of the North American Forests	139
	9—District of Columbia	149
	10—A Part of the Map of Juan de la Cosa, 1500, with Vignette of Samaná, from a Modern Chart	186
	11—Mappa Munde peinte sur Parchemin par Ordre de Henri II, Roi de France, 1532	188
	12—Map of United States, showing Distribution of the Total Quantity of Heat during Season of Growth and Reproductive Activity	238
	13—Map of United States, showing Mean Temperature of Hottest Six Consecutive Weeks of Year	238
	14—Map of United States, showing Life Zones	238
	15—Membership Diagram, National Geographic Society	lxxxiii
DARTON:	Figure 1—Cross-section of Eastern Ridges of Shawangunk Mountain through Lake Mohonk	27
	2—Cross-section of Eastern Ridges of Shawangunk Mountain through Lake Minnewaska	29
	3—Lake Awosting	30
HAYES and CAMPBELL:	Figure 1—Diagram showing Oscillations of Land Surface at Chattanooga, Tennessee	99
	2—Sketch Map of the Tennessee Gorge	116
	3—Diagram showing Variation in Character of Cretaceous and Tertiary Sediments in Alabama	125
FERNOW:	Figure 1—A German Spruce Forest under Management	147
BAKER:	Figure 1—District of Columbia	152

Page

REDWAY: Figure 1—A Part of the Map of Herrera, 1601, with Vignette of Watling Island (modern)..... 187
2—Modern Map of Samaná, Crooked and Acklin Islands..... 191
BABB: Figure 3—The Antarctic Continent..... 221